WHAT IS CLAIMED IS:

1. An isolated nucleic acid that encodes a Patched like transmembrane protein, functioning in male germ cell development, and as a potential tumor suppressor, comprising:

(a) a nucleotide sequence selected from the group consisting of:

(i) SEQ ID NO: 1, SEQ ID NO: 4;

(ii) the complement of the sequences set forth in (i);

(iii) the nucleotide sequence of SEQ ID NO: 2, SEQ ID NO: 5;

(iv) a degenerate variant of the sequences set forth in (iii); and

(v) the complement of the sequences set forth in (iii) and (iv); or

(b) a nucleotide sequence selected from the group consisting of:

(i) a nucleotide sequence that encodes a polypeptide having the sequence of SEQ ID NO: 3, SEQ ID NO: 6;

(ii) a nucleotide sequence that encodes a polypeptide having the sequence of SEQ ID NO: 3, SEQ ID NO: 6, with conservative amino acid substitutions; and

(iii) the complement of the sequences set forth in (i) and (ii),

wherein said isolated nucleic acid comprising a nucleotide sequence selected from group (b) is no more than about 100 kb in length.

2. The isolated nucleic acid of claim 1 wherein said nucleic acid, or the complement of said nucleic acid, encodes a polypeptide having a role in male germ cell development, or is a potential tumor suppressor.

3. The isolated nucleic acid of claim 1, wherein said nucleic acid, or the complement of said nucleic acid, is expressed in testis, as well as in adrenal, adult and fetal liver, bone marrow, brain, kidney, lung, placenta, prostate, skeletal muscle or colon.

4. A nucleic acid probe, comprising:

(a) the nucleic acid of claim 1; or

(b) at least 17 contiguous nucleotides of SEQ ID NO: 7, SEQ ID NO: 11, SEQ ID NO: 4796, SEQ ID NO: 4800,

wherein said probe according to (b) is no longer than about 100 kb in length.

5. The probe of claim 4, wherein said probe is detectably labeled.

6. The probe of claim 4, attached to a substrate.

7. A microarray, wherein at least one probe of said array is a probe according to claim 4.

8. The isolated nucleic acid molecule of claim 1, wherein said nucleic acid molecule is operably linked to one or more expression control elements.

9. A replicable vector comprising a nucleic acid molecule of

claim 1.

10. A replicable vector comprising an isolated nucleic acid molecule of claim 8.

11. A host cell transformed to contain the nucleic acid molecule of any one of claims 1 or 8 - 10, or the progeny thereof.

12. A method for producing a polypeptide, the method comprising: culturing the host cell of claim 11 under conditions in which the protein encoded by said nucleic acid molecule is expressed.

13. An isolated polypeptide produced by the method of claim 12.

14. An isolated polypeptide, comprising:

(a) an amino acid sequence from SEQ ID NO: 3, SEQ ID NO: 6;

(b) an amino acid sequence having at least 65% amino acid sequence identity to that of (a);

(c) an amino acid sequence according to (a) in which at least 95% of deviations from the sequence of (a) are conservative substitutions; or

(d) a fragment of at least 8 contiguous amino acids of any of (a) - (c).

15. A fusion protein, said fusion protein comprising a polypeptide of claim 14 fused to a heterologous amino acid sequence.

16. The fusion protein of claim 15, wherein said heterologous

amino acid sequence is a detectable moiety.

17. The fusion protein of claim 16, wherein said detectable moiety is fluorescent.

18. The fusion protein of claim 15, wherein said heterologous amino acid sequence is an Ig Fc region.

19. An isolated antibody, or antigen-binding fragment or derivative thereof, the binding of which can be competitively inhibited by a polypeptide of claim 14.

20. A transgenic non-human animal modified to contain the nucleic acid molecule of any one of claims 1 or 8 - 10.

21. A transgenic non-human animal unable to express the endogenous orthologue of the nucleic acid molecule of claim 1.

22. A method of identifying agents that modulate the expression of HTPL, the method comprising:
contacting a cell or tissue sample believed to express HTPL with a chemical or biological agent, and then comparing the amount of HTPL expression in said cell or tissue sample with that of a control,
changes in the amount relative to control identifying an agent that modulates expression of HTPL.

23. A method of identifying agonists and antagonists of HTPL, the method comprising:
contacting a cell or tissue sample believed to express HTPL with a chemical or biological agent, and then comparing the activity of HTPL with that of a control,

amino acid sequence is a detectable moiety.

17. The fusion protein of claim 16, wherein said detectable moiety is fluorescent.

18. The fusion protein of claim 15, wherein said heterologous amino acid sequence is an Ig Fc region.

19. An isolated antibody, or antigen-binding fragment or derivative thereof, the binding of which can be competitively inhibited by a polypeptide of claim 14.

20. A transgenic non-human animal modified to contain the nucleic acid molecule of any one of claims 1 or 8 - 10.

21. A transgenic non-human animal unable to express the endogenous orthologue of the nucleic acid molecule of claim 1.

22. A method of identifying agents that modulate the expression of HTPL, the method comprising:
contacting a cell or tissue sample believed to express HTPL with a chemical or biological agent, and then comparing the amount of HTPL expression in said cell or tissue sample with that of a control,
changes in the amount relative to control identifying an agent that modulates expression of HTPL.

23. A method of identifying agonists and antagonists of HTPL, the method comprising:
contacting a cell or tissue sample believed to express HTPL with a chemical or biological agent, and then comparing the activity of HTPL with that of a control,

increased activity relative to a control identifying an agonist, decreased activity relative to a control identifying an antagonist.

24. A purified agonist of the polypeptide of claim 14.

25. A purified antagonist of the polypeptide of claim 14.

26. A method of identifying a specific binding partner for a polypeptide according to claim 14, the method comprising:
contacting said polypeptide to a potential binding partner; and
determining if the potential binding partner binds to said polypeptide.

27. The method of claim 26, wherein said contacting is performed *in vivo*.

28. A purified binding partner of the polypeptide of claim 14.

29. A method for detecting a target nucleic acid in a sample, said target being a nucleic acid according to claim 1, the method comprising:

(a) hybridizing the sample with a probe comprising at least 17 contiguous nucleotides of a sequence complementary to said target nucleic acid in said sample under high stringency hybridization conditions, and

(b) detecting the presence or absence, and optionally the amount, of said binding.

30. A method of diagnosing a disease caused by mutation in HTPL, comprising:

detecting said mutation in a sample of nucleic acids that derives from a subject suspected to have said disease.

31. A method of diagnosing or monitoring a disease caused by altered expression of HTPL, comprising:
determining the level of expression of HTPL in a sample of nucleic acids or proteins that derives from a subject suspected to have said disease,
alterations from a normal level of expression providing diagnostic and/or monitoring information.

32. A diagnostic composition comprising the nucleic acid of claim 1, said nucleic acid being detectably labeled.

33. The diagnostic composition of claim 32, wherein said composition is further suitable for *in vivo* administration.

34. A diagnostic composition comprising the polypeptide of claim 14, said polypeptide being detectably labeled.

35. The diagnostic composition of claim 34, wherein said composition is further suitable for *in vivo* administration.

36. A diagnostic composition comprising the antibody, or antigen-binding fragment or derivative thereof, of claim 19.

37. The diagnostic composition of claim 36, wherein said antibody or antigen-binding fragment or derivative thereof is detectably labeled.

38. The diagnostic composition of claim 37, wherein said composition is further suitable for *in vivo* administration.

39. A pharmaceutical composition comprising the nucleic acid of claim 1 and a pharmaceutically acceptable excipient.

40. A pharmaceutical composition comprising the polypeptide of claim 14 and a pharmaceutically acceptable excipient.

41. A pharmaceutical composition comprising the antibody or antigen-binding fragment or derivative thereof of claim 19 and a pharmaceutically acceptable excipient.

42. A pharmaceutical composition comprising the agonist of claim 24 and a pharmaceutically acceptable excipient.

43. A pharmaceutical composition comprising the antagonist of claim 25 and a pharmaceutically acceptable excipient.

44. A method for treating or preventing a disorder associated with decreased expression or activity of HTPL, the method comprising administering to a subject in need of such treatment an effective amount of the pharmaceutical composition of any of claims 39, 40 or 42.

45. A method for treating or preventing a disorder associated with increased expression or activity of HTPL, the method comprising administering to a subject in need of such treatment an effective amount of the pharmaceutical composition of claim 41 or 43.

46. A method of modulating the expression of a nucleic acid

according to claim 1, the method comprising: administering an effective amount of an agent which modulates the expression of a nucleic acid according to claim 1.

47. A method of modulating at least one activity of a polypeptide according to claim 14, the method comprising: administering an effective amount of an agent which modulates at least one activity of a polypeptide according to claim 14.